In memory of our favorite teacher and old friend Lyudmila Obukhova

The Playground as a Phenomenon of Children's Subculture

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Abstract. The playground is analyzed from the perspective of cultural-historical psychology as a cultural artifact and a cultural tool for mental development. In accordance with its cultural function, a playground must provide opportunities for children and adolescents to satisfy their need for playing, moving, exploring the environment's properties and their own physical abilities, as well as communicating with other children and adults. Allowance for these functions should be made both when selecting the equipment and when planning the overall playarea. Analyses of landscape architecture courses in Russia have demonstrated that neither syllabi nor study materials available in Russian provide the necessary training tools to enable landscape architects to design a playground that would satisfy the needs of children and adolescents. Therefore, cross-disciplinary cooperation is required. Developmental psychologists should be involved in playground planning as well as in the process of urban development training. Our results compare the behavior of children in conventional (16 playgrounds in Moscow) and next-generation playgrounds (6 playgrounds: in Neskuchny Garden in Moscow, Mikhailovsky Garden in Saint Petersburg, and Sochi Park). The next-generation playgrounds were found to answer children's developmental needs better, unlocking the potential of the playground as a development tool. This confirms the point on effective cooperation between landscape architects and psychologists.
Keywords: playground, play area, play, psychologist- and educator-assisted planning, architecture, cultural artifact.

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Psychologists in a playground? What could they be there for? This is the question that we often hear from our colleagues. Indeed, why would playgrounds be of interest to developmental psychologists?

Our team has conducted theoretical and empirical research on children's playgrounds (or, more broadly, children's play environments) as a specific phenomenon of culture, cultural tool, or artifact. We proceed from the assumption that children's activities in outdoor

play areas are associated with "disobjectification" of meanings and functions of play environments, in fact representing the creative, fanciful and transformative activities of children and their interaction with others—children and adults in the playground.

The theoretical foundation for our approach is provided by cultural-historical psychology and activity theory, i. e. the works of Lev Vygotsky, Aleksey Leontiev, Georgy Shchedrovitsky, Aleksandr Asmolov, Vitaly Rubtsov, Vladimir Munipov, Boris Elkonin and Vyacheslav Glazychev.

The first playgrounds became part of urban industrial culture in the early 20th century as a compromise between urbanization and children's need to play and move [Kotliar, Sokolova 2016]. In modern cities, the playground is a place where children can play, move around, communicate, cooperate and experiment freely, i. e. playgrounds support their mental and physical development. However, different playgrounds offer different scopes for such opportunities. How does each specific playground fulfill its cultural function? How does it encourage child development?

The answer to these questions comes in several parts. First, it is necessary to analyze the specific activities that playground visitors, both children and adults, engage in, and assess the development potential of an individual playground. At the same time, it is important to describe the "perfect formula", i. e. what a playground should be like in order to fulfill its cultural function, and to determine its design requirements. In addition, it is vital to find out whether the experts involved in playground design and development dispose of resources necessary to incorporate the required cultural functions.

Methodological support for play area design

Foreign practices regarding play area design have fairly ample methodological support. Researchers discuss general and specific issues of planning as well as its peculiarities in cases of creating public and educational institution play areas [Beltzig 1990; Dattner 1974; U. S. Consumer Product Safety Commission 2015]. Research in play safety and risky behavior is an essential component of methodological support for play area design [Ball, Gill, Spiegal 2008; Sheina, Sokolova 2016]. Empirical research provides a valid basis for design. As the framework of this article does not allow for dwelling on design research and practices (see our analysis [Kotliar, Sokolova 2016]), the illustration will be confined to two sources that Russian landscape designers feed upon.

Leading German play area designers Georg von Agde, Alfred Nagel and Julian Richter propose a very important perspective on what the playground is and what it should be like: "Adults often believe they know perfectly well what children need, which results in playgrounds restraining children's activities and imagination. Children should be free to choose where, when and how to play. They

should be able to bring their experience into play and diversify games themselves. Therefore, play areas should be designed in such a way that children (and probably adults, too) could have multiple opportunities to engage with the world around them while playing." [Agde, Nagel, Richter 1988:6]. The idea is cultivated in Ernst Neufert's *Architects' Data*, the 'bible' for many landscape designers: "Play makes a fundamental contribution to the development of a child's personality. It is mainly through play that small children adapt to their environment. Play areas must be varied, changing and changeable." [Neufert 2006:220].

Therefore, the playground is first of all an area for play, experiments, and child or parent-child cooperation; it must be changeable and encourage children's initiative. This approach has been widely used in European play area design practices.

Playground planning is rather poorly described in the available Russian literature, both theoretical and empirical—mostly in the context of organizing object-based learning environments in educational institutions. Thus, teaching aids on this issue are largely presented by various regulatory documents[1].

It is only in Aleksandr Grashin's study that playgrounds are constructed as object-based development environments [Grashin 2008]. Play objects stimulate specific physical activities and also serve as metaphors. For example, children on a seesaw experience a continuous change of social standing, going from domination down to submission and back in turns. A number of playground objects imply cooperation and coordination of joint effort: a few people are required to spin a merry-go-round at maximum speed. Playground objects allow children of different ages to solve problems specific to their stage of development. While a preschooler must learn to use alternating hands and feet and develop this skill to climb stall bars, a middle-schooler has already achieved this goal and can set new goals with the same object, like climbing as high as possible. As Grashin points out, play area designers do not design an object (or set of objects)—they design a situation that promotes a child's activity and interaction with other people. "Elements of playground objects must fit a child-proportioned environment into the adult world." [Ibid.: 39] However, the book does not offer any specific recommendations or considerations, uses sophisticated language and, unfortunately, does not make a working tool for landscape designers.

Training landscape designers to design play areas

Landscape design curricula and the study guides of three colleges—Moscow State Forest University (the major university preparing land-

[1] National Standard of the Russian Federation "Playground Equipment. Construction Safety and Test Methods": http://tehnorma.ru/gosttext/gost/gost-dop_285.htm

scape designers), Ulyanovsk State Technical University and Magnitogorsk State University—were analyzed in order to evaluate the programs that train landscape designers to design play areas, from the perspective of this study. Bachelor's and Master's degree programs offer no dedicated play area design courses[2] but imply the possibility of undertaking small-scale optional projects as a part of other courses (e. g. Small Gardens or Design of Municipal Improvements). One of the study guides stipulates that a playground must be *completely safe* (bold added) and include equipment for physical activity, didactic games, drawing and molding [Sotnikova 2010]. Playgrounds are considered to be designed mainly for children aged under 12, while no facilities are provided for older children or adults (other than accompanying toddlers of 1.5–3 years of age). Such a perception of playground users narrows down the cultural function of play areas significantly.

Another study guide approaches the playground as a means of organizing children's leisure education activities, as a place for preschoolers and early school-age children to play. It indicates that a playground contributes to the physical and mental development of children: "A properly organized playground motivates children for independent physical activity, personality development and the acquisition of important skills contributing to their cultural behavior." [Grigoryev 2006: 4] Playground users are also restricted to early school-age children here, and the main activities include play and mobility. No specific methods of organizing a playground properly so that it fulfills its cultural functions are offered by the study guide.

Naturally, a number of factors affect the professional attitude of any expert, including landscape designers. The literature studied, the lectures attended and the term projects accomplished are not the only factors shaping this attitude.

How do young landscape designers picture a playground in their own minds? A two-year participant observation of 15 landscape designers analyzed their behavior and utterances in all kinds of situations: as they conceptualized playgrounds and discussed conceptions with customers, worked on specific projects, selected playground

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[2] Bachelor's degree curriculum in Landscape Design, Moscow State Forest University, Federal State Budgetary Institution of Higher Professional Education, available at: http://www.mgul.ac.ru/UserFiles/File/MetodOtdel/Uchebnye_plany_FGOS_VO_2016/Uchebnye_plany_Bakalavriata_2014_1___4_kursy/Ucheb_plan_350031001_14_12345_29.05.15_Oo_Vo_Zo_Ispr.pdf; Master's degree curriculum in Landscape Design, Moscow State Forest University, Federal State Budgetary Institution of Higher Professional Education, available at: http://www.mgul.ac.ru/UserFiles/File/MetodOtdel/Uchebnye_plany_FGOS_VO_2016/Uchebnye_plany_Magistratura_2014/Ucheb_plan_35040901_2014_12_29.05.15_Oo_P.pdf; Specialist's degree curriculum in Architectural Environment Design, Ulyanovsk State Technical University, available at: http://plans.ulstu.ru/planFull.php?if=1&plan=147

equipment, changed conceptions due to budget variations, etc. All the participating architects had college degrees and public space design experience of at least three years.

It transpires that landscape designers use the following information when designing play areas for children:

- Public space design knowledge gained from college. The focus is placed on the project aspects that are pivotal for an architect: styles, colors, textures, public space architecture, etc., as well as engineering design (keeping tabs on the existing objects, utility lines and plants);
- Their own childhood play experience and memories: which playgrounds they liked as children and found interesting to play in;
- Their own current experience: which playgrounds they like today;
- Subjective understanding of the interests, needs and preferences of their own children (if they have any);
- Generalized ideas of what children like (clichés like "All children like to play in the sand" or "Children like bright colors");
- Visual conceptions and ideas of a beautiful public space, trendy solutions, and world analogues.

The fundamental professional concepts of landscape designers do not include children's needs and interests, their specific age peculiarities, characteristics of children's activity, or the needs and interests of accompanying adults. This is one of the key reasons why the existing play areas in Russia do not fulfill their cultural function or contribute to the mental development of children.

What are the possible ways out of the current situation? It is absolutely necessary to extend landscape design curricula, add dedicated courses on play area and playground design, and elaborate new study guides. It is also very important to publish and republish both Russophone and translated books on play area design.

Cooperation between landscape designers and developmental psychologists in the design of outdoor play areas

Play areas can be designed either by a mono-team of landscape designers or by cross-disciplinary teams involving child and developmental psychologists. The role of psychologist in such collaborations consists in representing the interests and needs of main playground users, i. e. children and adults accompanying them. Psychologists focus on the following questions: what is the function of this specific play area depending on its location within the city system? which needs (for play, communication, experimenting, mobility and risk-taking) of potential playground users can be satisfied within this area? how will the needs and interests of children of different ages be satisfied—for instance, even if the playground is designed for teenagers in the first place, will there be room for early school-age children? do the availa-

ble play objects and landscape elements have a high play value? are there conditions for risky behavior, and is the playground still safe?

As real-life collaborative outdoor play area design practices have been summarized, the following psychological requirements for playground design are set forth: consider the age peculiarities; provide a high play value and good accessibility of objects; maintain an acceptable level of risk; make allowances for varying levels of visitor activity; ensure a communication-friendly environment (for more details, see Kotliar, Sokolova, Frontov [2014]). The psychologist's mission is to help the landscape designer ensure compliance with these principles when designing a specific play area, i.e. to help them create a playground that will consider the needs of all its potential users, both children and adults.

A team of landscape designers and developmental psychologists has worked on play area design solutions for four years, resulting in a dozen residential and park playgrounds[3].

Are there any differences between co-designed and conventional playgrounds? How do these differences affect user behavior? In order to answer these questions, an empirical study was conducted, comparing the behavior of children and adolescents in conventional play areas and new-generation playgrounds, in whose design we assisted directly as developmental psychology advisers.

Analysis of children's behavior in conventional and new-generation playgrounds

It was suggested that the main differences between conventional and new-generation playgrounds would consist in behavioral patterns of children and accompanying adults in the playground. A two-stage study was conducted to test this hypothesis.

During the first stage in August–September 2013, we observed the behavior of visitors in 16 Moscow conventional playgrounds, typical of megalopolises. These playgrounds were equipped as usual: sandpits, swings, merry-go-rounds, spring rockers, huts, and slides. In some of the playgrounds, equipment was partly combined into a play system with a simple small (2 meters high at most) climbing structure and a slide. The play areas mostly had asphalt or rubber flooring.

The second stage of observation targeted new-generation playgrounds located in the parks of Moscow (one play area in Neskuchny Garden), St. Petersburg (one play area in Mikhaylovsky Garden) and Sochi (four play areas in Sochi Park). These playgrounds come with all-wooden equipment and wood chips or pea gravels as ground-cover material. In addition to conventional equipment (sandpit, swing),

[3] These play spaces will hereinafter be referred to as new-generation playgrounds to represent the global trend of involving various types of experts and potential users themselves in play area design (the so-called participatory design [Sanoff 2015]). The playgrounds designed without the participation of psychologists will be referred to as conventional.

the playgrounds also had equipment that encouraged cooperation (walkie-talkies, water pumps, hydraulic structures, two-user and basket swings, hammocks, rafts, etc.), experimenting (loose materials, e. g. water, pea gravels, sand or wood chips, screw pumps, pumping systems, musical facilities, complex-trajectory objects, e. g. discs, merry-go-rounds, seesaws), and risk-taking (tall climbing structures, slides, suspension bridges, etc.). Data on visitor behavior was collected in September 2014, June–August 2015, and June–August 2016.

The following was documented using observation as the key research method (see Kotliar, Sokolova [2014] for a more detailed description):

(1) types of child–child and child–adult interactions in the playground (between children: communication, conflicts; adults' behavior: control, assistance and involvement, indifference);
(2) actions performed by visitors on playground objects.

Visitors' actions on playground objects were divided into two large groups: those "prescribed" by the object logic (swings are used for swinging, slides for sliding down, sandpits for playing with sand, etc.) and those "overcoming" the object logic, which include:

- experimenting with objects (climbing up the slide chute);
- transforming objects or materials, trying to use objects in a different way;
- playing: any action is performed "in pretense", "as if"; the object is used as a condition, a space for playing;
- risky situations arising while using objects.

Descriptive statistic methods were used to process the data. The estimations took into account that the playgrounds had been observed a different number of times and the number of visitors differed from day to day.

A comparison of visitor behavior in conventional and new-generation playgrounds reveals considerable differences between the two types.

The observation of children and adolescents in conventional playgrounds demonstrates that their exploration of object properties is confined to simple, ordinary activities, most often within the inherent object logic. Children almost never go beyond typical actions, sliding down from slides, swinging on swings, etc. "Overcoming", i. e. going beyond the conventional use, experimenting with one's capabilities and object opportunities, can rarely be observed in playgrounds of this type (less than 30% of all actions). Play was only observed in 15% of the cases, which means that the playground—the main and essential urban space designed for children—did not encourage play activity. Most often, children would play in the hut (30%) or in the play

system and the sandpit. Conflicts were extremely rare (less than 2%), mainly on the swing and in the hut, in situations of regulating the order and duration of using an object (who swings for how long and in what order), or during a group game. Only one risky situation—on a slide—was documented for the whole period of observation. Experimenting was also observed only with slides, when children would climb up the slippery chute. Risk-taking, so important for child development, is probably neither implied nor encouraged by the analyzed playground objects.

Children in conventional playgrounds mostly act as object users, performing only logic-prescribed actions, not trying to transform the objects. They engage little in productive types of activities, experimenting, play, and communication. That is, no opportunity for such activities is integrated in the play area.

New-generation playgrounds reveal a different picture. During observations, children and adolescents "disobjectification" successfully all the design conceptions. They experiment actively with their mobility and the properties of objects and media around them. They undertake risky actions on their own or in cooperation with other children or adults, communicate, and play adventure-type games as well as games with rules. Equal proportions of logic-prescribed (sliding down from slides, swinging on swings) and logic-overcoming (e. g. climbing up the slide chute) actions were observed, along with experimenting, trying new things, and risk-taking. Conflicts were as rare as in conventional playgrounds, most times relating to the order of using playground objects.

In conventional playgrounds, children and adolescents move along two major trajectories. The first one is from object to object, from one activity to another, with no coherence between the actions. The second trajectory depends on the game story or the development of communication. Visitor movement trajectories in new-generation playgrounds are much more complex and diverse. In addition to the two described above, there can be explorative trajectories (visitors move from object to object, trying and varying a specific motion or method of operating an object) and trajectories of cooperation (two or more visitors move from object to object together, interacting with each other on the subject of such objects and exploring the possibility of their shared use).

The greater diversity and complexity of mobility trajectories in new-generation playgrounds revealed in this study are consistent with the findings of a Canadian research on the so-called play pathways and their effects on behavior [Cosco, Moore, Islam 2010]. The playground is not just the sum of individual isolated objects—the objects must be interrelated into a system. If such interrelations are present and meaningful, they will have a positive impact on children's behavior, encouraging them to move around, cooperate, and play.

Parents in conventional playgrounds largely perform the function of control (61% of cases); the most controlled zones include climbing walls, merry-go-rounds and play systems, while the bench and the hut are the least controlled ones. Parents accompany their children, control what they do, and resolve challenging and conflict situations that arise. The sandpit and the bench are where parents engage in shared activities most often (22%). Children are mostly helped by adults when using seesaws, spring rockers, and slides. Parents rarely involve themselves in the playground activities of their children (except for toddlers). Parents themselves admit to being bored in playgrounds and perceive going there as a forced necessity. As a result, children feel less free to experiment and play and remain less active and creative, being constantly under the adults' control.

Parents in new-generation playgrounds are active and proactive, joining their children in exploring the objects and the playground as a whole. They find the play areas interesting, unusual, and attractive even for adults. We observed a number of adults, especially fathers, experimenting in the playgrounds and playing with their children. In new-generation playgrounds, adults accompanying children and adolescents often engage in shared activities. The play objects themselves are a powerful motivator, allowing talking over walkie-talkies, pumping and pouring water together, rafting around the pond, playing musical instruments, constructing, jumping on a trampoline together, pushing kids on a swing, etc. Controlling behavior was observed as children and adolescents undertook risky explorative actions, e. g. attempting to climb tall towers or other climbing structures. Adults' utterances addressed to children in the playground can be divided into two large categories:

- commenting on children's and adolescents' capabilities, often in a negative way ("Don't climb, you're gonna fall! You can't, it's too hard for you!");
- encouraging explorative behavior ("Don't be scared, give it a try!"). Unfortunately, encouraging utterances can become imperative, when parents make children do something they are not ready to do ("Climb there, don't be chicken! Coward! You'll get no ice cream!").

It is mostly fathers who demand that their children do something in the playground. Not only do such utterances shape a negative self-image ("I am a coward, I can't do what my parents want me to") but they also form an inadequate perception of one's own abilities ("I cannot do something because it is difficult and I am scared, but my parents want me to do it, so I have to") and inhibit the development of the ability to identify truly dangerous situations and make risk-based decisions [Sokolova, Sheina 2016]. Analysis of adult behavior patterns in the playground goes beyond this article, but the observations pre-

sented here indicate that parent-child interactions in the playground are an aspect that requires dedicated research.

On the whole, adults in new-generation playgrounds engage more actively in interactions with their children, controlling them less, having a more positive emotional state of mind, and being more willing to play.

Conclusion

The behavior of children, adolescents and accompanying adults in conventional and new-generation playgrounds differs in all the identified parameters, from actions performed to mobility trajectories. In new-generation playgrounds, visitors engage in interactions with objects, materials and each other, as well as in explorative and risky behavior. Parents are involved in shared play activities.

New-generation playgrounds were designed with the participation of child psychologists. Design of play areas that satisfy the needs of both children and adults is a new practice for Russia and rather constitutes an exception today. Hopefully, it will spread.

The findings indicate strongly that co-designed playgrounds perfectly fulfill their cultural functions, enabling visitors to "disobjectify" the integrated meanings through play, communication, experiments, and risk-taking.

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